

versatile disc (DVD) player, an audio, a refrigerator, an air conditioner, a vacuum cleaner, an oven, a microwave oven, a washing machine, an air cleaner, a set-top box, a home automation control panel, a security control panel, a TV box, a game console, an electronic dictionary, an electronic key, a camcorder, and an electronic photo frame.

**[0040]** According to another embodiment, the electronic device may include at least one of various medical devices (e.g., various portable medical measuring devices (a blood glucose monitoring device, a heart rate monitoring device, a blood pressure measuring device, a body temperature measuring device, etc.), a magnetic resonance angiography (MRA), a magnetic resonance imaging (MRI), a computed tomography (CT) machine, and an ultrasonic machine), a navigation device, a global positioning system (GPS) receiver, an event data recorder (EDR), a flight data recorder (FDR), a vehicle infotainment device, an electronic devices for a ship (e.g., a navigation device for a ship, and a gyro-compass), avionics, security devices, an automotive head unit, a robot for home or industry, an automated teller machine (ATM) in banks, point of sales (POS) terminal in a shop, or an Internet of Things (IoT) device (e.g., a light bulb, various sensors, electric or gas meter, a sprinkler device, a fire alarm, a thermostat, a streetlamp, a toaster, sporting goods, a hot water tank, a heater, a boiler, etc.).

**[0041]** According to some embodiments, the electronic device may include at least one of a part of furniture or a building/structure, an electronic board, an electronic signature receiving device, a projector, and various kinds of measuring instruments (e.g., a water meter, an electric meter, a gas meter, and a radio wave meter). In various embodiments, the electronic device may be a combination of one or more of the aforementioned various devices. According to some embodiments, the electronic device may also be a flexible device. Further, the electronic device according to an embodiment of the present disclosure is not limited to the aforementioned devices, and may include a new electronic device according to the development of new technology.

**[0042]** Hereinafter, an electronic device, according to various embodiments, will be described with reference to the accompanying drawings. In the present disclosure, the term “user” may indicate a person using an electronic device or a device (e.g., an artificial intelligence electronic device) using an electronic device.

**[0043]** An electronic device **101** within a network environment **100**, according to various embodiments, is described with reference to FIG. 1. The electronic device **101** includes a bus **110**, a processor **120**, a memory **130**, an input/output interface **150**, a display **160**, and a communication interface **170**. In some embodiments, the electronic device **101** may omit at least one of the above elements or may include additional elements.

**[0044]** The bus **110** may include, for example, a circuit for interconnecting the elements **110** to **170** and transferring communication (for example, control messages and/or data) between the elements.

**[0045]** The processor **120** may include one or more of a CPU, an application processor (AP), and a communication processor (CP). For example, the processor **120** may carry out operations or data processing related to control and/or communication of at least one other component of the electronic device **101**.

**[0046]** The memory **130** may include a volatile memory and/or a non-volatile memory. The memory **130** may store,

for example, instructions or data relevant to at least one other element of the electronic device **101**. According to an embodiment, the memory **130** may store software and/or a program **140**. The program **140** includes a kernel **141**, middleware **143**, an application **30** programming interface (API) **145**, and/or application programs (or “applications”) **147**. At least some of the kernel **141**, the middleware **143**, and the API **145** may be referred to as an operating system (OS).

**[0047]** The kernel **141** may control or manage system resources (for example, the bus **110**, the processor **120**, or the memory **130**) used for performing an operation or function implemented by the other programs (for example, the middleware **143**, the API **145**, or the applications **147**). Furthermore, the kernel **141** may provide an interface through which the middleware **143**, the API **145**, or the applications **147** may access the individual elements of the electronic device **101** to control or manage the system resources.

**[0048]** The middleware **143** may serve as, for example, an intermediary for allowing the API **145** or the applications **147** to communicate with the kernel **141** to exchange data.

**[0049]** In addition, the middleware **143** may process one or more task requests received from the applications **147** according to priorities thereof. For example, the middleware **143** may assign priorities for using the system resources (for example, the bus **110**, the processor **120**, the memory **130**, or the like) of the electronic device **101**, to at least one of the applications **147**. Additionally, the middleware **143** may perform scheduling or load balancing on the one or more task requests by processing the one or more task requests according to the priorities assigned thereto.

**[0050]** The API **145** is an interface through which the applications **147** control functions provided from the kernel **141** or the middleware **143**, and may include, for example, at least one interface or function (for example, instruction) for file control, window control, image processing, or text control.

**[0051]** The input/output interface **150** may function as, for example, an interface that may transfer instructions or data input from a user or another external device to the other element(s) of the electronic device **101**. Furthermore, the input/output interface **150** may output the instructions or data received from the other element(s) of the electronic device **101** to the user or another external device.

**[0052]** The display **160** may include, for example, a liquid crystal display (LCD), a light-emitting diode (LED) display, an organic LED (OLED) display, a microelectromechanical systems (MEMS) display, and an electronic paper display. The display **160**, for example, may display various types of contents (for example, text, images, videos, icons, or symbols) for the user. The display **160** may include a touch screen, and may receive, for example, a touch, gesture, proximity, or hovering input by using an electronic pen or a part of the user's body.

**[0053]** The communication interface **170** may set, for example, communication between the electronic device **101** and an external device (for example, a first external electronic device **102**, a second external electronic device **104**, or a server **106**). For example, the communication interface **170** may be connected to a network **162** through wireless or wired communication to communicate with a second external electronic device **104** or a server **106**.